

Genetic Lifehacks

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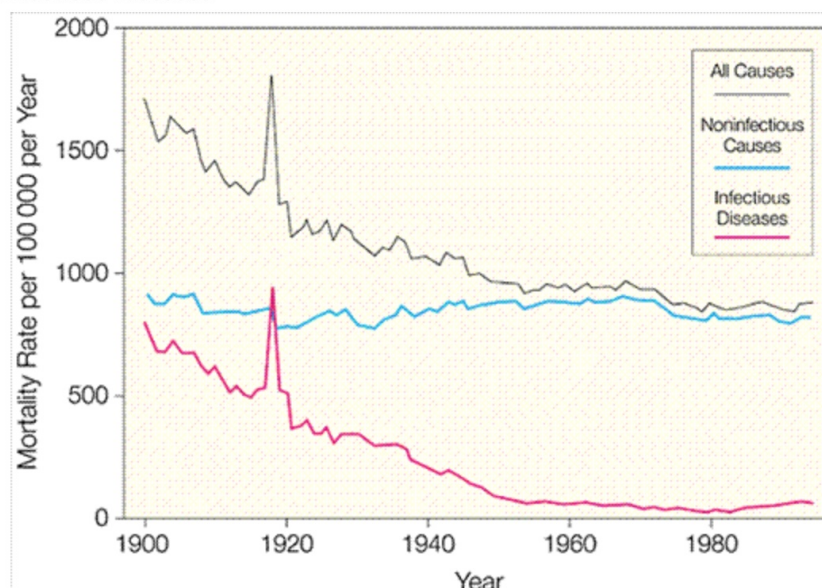
Hi everyone,

I have two new articles out this week - one on long Covid research and the other a quick article on the genetic mutation that prevents AIDS.

The more that I learn about our genetic differences in immune responses, the more fascinating it is. There is a [study](#) out now that investigated what the researchers called "discordant couples" - where one person got Covid and their spouse, who was highly exposed, didn't get it. The differing genetic variants were in the HLA genes and in a gene that affects the activity of natural killer cells (part of the immediate immune response to a virus). Unfortunately, almost all of the SNPs in the study are not covered in 23andMe or AncestryDNA data. It was interesting to see that some variants reduced the risk of symptomatic infection by more than 60% while other variants increased the risk up to 7-fold.

We are all unique, and our genomes really are shaped by the bacteria and viruses that our ancestors survived. It is amazing to see how far we've come in just the past 100 years. I came across a chart showing the dramatic change in mortality rates over the 20th century. Infectious disease mortality dropped to low levels by 1950 (red line), while non-infectious disease mortality stayed steady (blue line). [[ref](#)]

Figure 2. Crude Mortality Rates for All Causes, Noninfectious Causes, and Infectious Diseases



Gratefully yours,

Debbie

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Long Covid Research and Potential Causes

Long Covid is the persistence of symptoms after having COVID-19. It seems to affect both severe COVID-19 patients as well as people who had mild cases. Fatigue, brain fog, and breathing issues are the most common symptoms, but the list of associated problems is varied and long.

This article digs into current research on long Covid. I'll explain the theories on the underlying causes, and then go into some of the treatments that are being researched. Finally, I'll include some genetic variants that tie into possible root causes of long Covid.

[Read the full article](#)



CCR5-Δ32

A Mutation that blocks you from getting AIDS or HIV

With the recent news [headlines](#) about a woman being cured of HIV, I wanted to highlight the genetics research on the CCR5 Delta32 mutation.

We all have different strengths and weaknesses when it comes to fighting pathogens. Some people will never get the [norovirus](#) (stomach flu), but for others, their superpower may be fighting off AIDS. Genetic variants in immune system genes make us all a little different – and this uniqueness helps us as a species survive and thrive.

This article explains the CCR5 gene and the Delta32 variant that protects some people from AIDS. I'll dive into the science of how HIV infects cells and then explain how to check your 23andMe or other genetic raw data to see if you carry the variant.

[Read the full article](#)

What I've Been Reading...

1) [Psilocybin treatment for major depression effective for up to a year for most patients, study shows \(EurekAlert\)](#).

Psilocybin, the active component in magic mushrooms, has been studied for use in treating depression and PTSD. The new research shows that the antidepressive effects from treatment with two doses of psilocybin in a clinical setting were stable, lasting for more than a year. This is pretty impressive – a treatment for major depressive disorder that potentially lasts for a year or more with just two doses and sessions.

2) [Types of stressors that increase susceptibility to the common cold in healthy adults.](#)

This study from 1998 was making the rounds on Twitter. The 276 study participants completed psychological questionnaires and then were inoculated with a combo of common cold viruses. Participants with certain life stressors that had lasted more than a month were 2 to 4-fold more likely to get sick from being inoculated with the cold viruses. Essentially, the people who got sick were those who were either under- or unemployed or had relationship difficulties in their families. The irony of lockdowns for a coronavirus... causing unemployment and being sequestered at home with family.

If you're interested in how and why chronic stress impacts immune response, check out my article on [Cortisol, Stress, and HPA Axis Dysfunction.](#)

3) [Registered Clinical Trial: COVID-19 Messaging for Vaccination](#)

This is a registered clinical trial by MIT, Stanford, Harvard, Yale, Johns Hopkins, NIH, and Facebook to determine the most effective messaging on vaccinations. The randomized controlled trial was applied to people in 1402 counties in 19 states that had less than 60% Covid vaccination rates. You can click the link to read through the detailed description of the three different 'treatment groups', but essentially the behavioral intervention trial targeted groups with ads about the vaccination and then broke them into 'friends' or 'gossips' to promote the vaccine.

If you are on Facebook and live in one of the 1402 counties with a <60% vaccination rate, **you were part of this randomized controlled trial.** This really bugs me... taxpayer funding, no option as to whether to participate, no informed consent, etc. And yes, I realize that all of Facebook's ad targeting is essentially a behavioral intervention trial, but this one seems particularly wrong on a lot of levels.

4) [Estimating impact of food choices on life expectancy: A modeling study.](#)

This modeling study looked at different diet optimizations and calculated the possible impact on lifespan. Unsurprisingly, the results showed that avoiding processed foods, sugar-sweetened beverages, and refined grains while eating a whole foods diet (including fish, legumes, fruits, and vegetables) was associated with a longer lifespan.

What I find interesting is that making the change to a healthier diet at age 60 is estimated to be almost as impactful as making good dietary choices starting at age 20. Thus, even if you are older, cutting out junk food now is likely to have a very positive impact on healthspan.

Snowy and beautiful, MT

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